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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/651,115

08/28/2003

Keith D. Mease

TN285

7863

7590
Unisys Corporation
Attn: Lise A. Rode
Unisys Way, MS/E8-114
Blue Bell, PA 19424-0001

02/07/2007

EXAMINER

PAPE, ZACHARY

ART UNIT

PAPER NUMBER

2835

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/651,115

Applicant(s)

MEASE ET AL.

Examiner

Zachary M. Pape

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/3/2007 has been entered.

Drawings

2. The objection to the drawings has been withdrawn in view of the amendment to said drawings.

Claim Objections

3. The objection to claim 20 has been withdrawn in view of the amendment to said claim 20.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 9-12, 14-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hughes et al. (US 5,883,784).

With respect to claim 1, Hughes et al. teaches a heat sink (10) configured to support an edge (82) of a circuit card (80), said heat sink comprising: a thermally conductive base (See present office action Fig 1 below); a plurality of thermally conductive heat dissipating fins (See POA Fig 1 below), extending perpendicularly from said base each fin having a length extending parallel to the base; and one or more recesses (16), each recess at least partially defined by adjacent parallel faces of two adjacent fins extending perpendicularly from said base, the recesses being defined in part by surfaces extending along the length of the fins parallel to the base, having a depth smaller than the height of said fins (See Fig 2, POA Fig 1 below), and being configured to support the edge of a circuit card (Column 3, Lines 55-57).

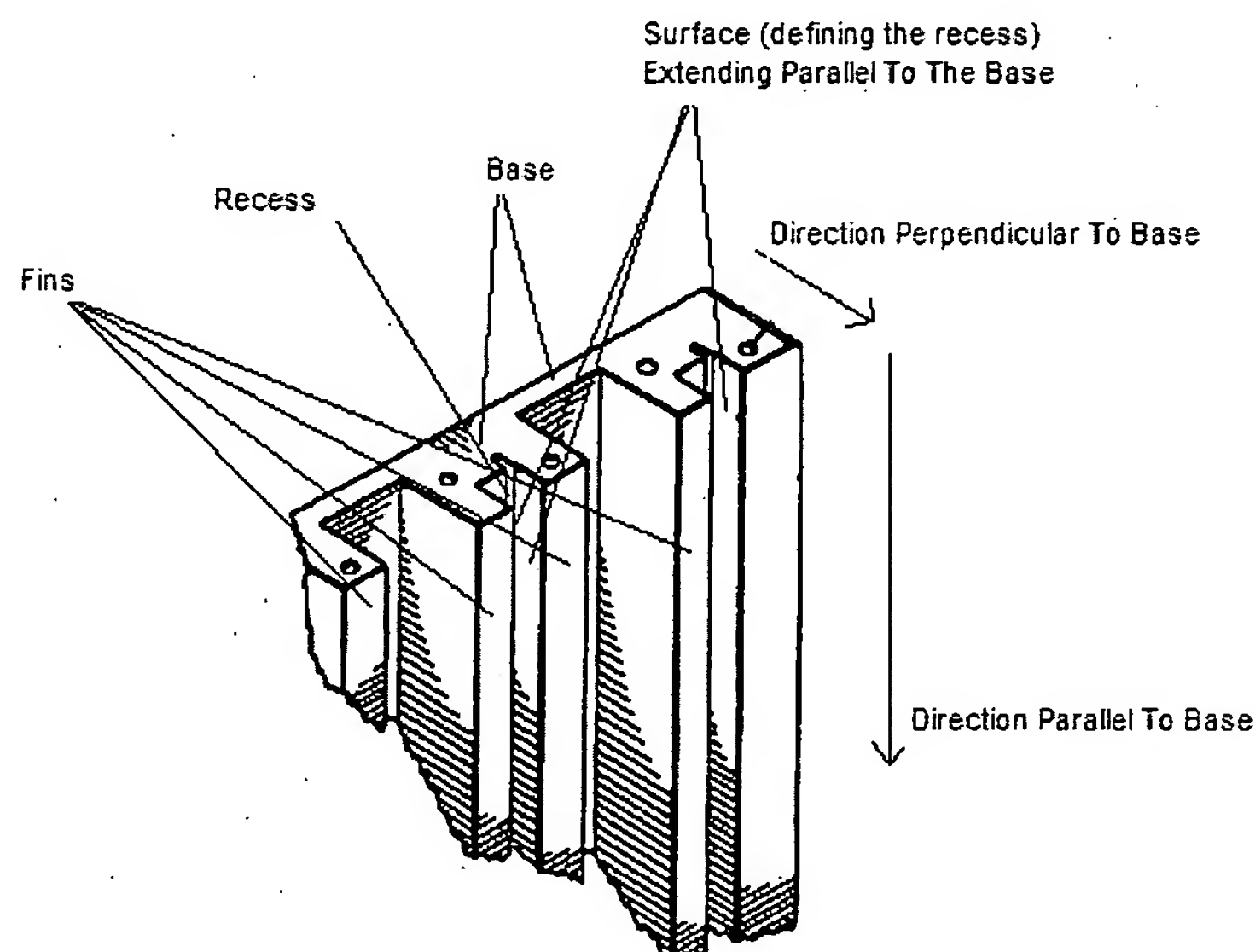


Fig 1

With respect to claim 2, even though the claims are limited and defined by the recited process, the determination of patentability of the product is based on the product itself, and does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

With respect to claim 3, Hughes et al. further teaches that the one or more recesses (16) are further configured to support the edge (82) of the circuit card (80) in sliding association with said heat sink (See Hughes et al. Fig 6).

With respect to claim 4, Hughes et al. further teaches that the recess (16) is a slot configured to guide the edge (82) of the circuit card (80) during sliding movement of the circuit card (See Fig 6).

With respect to claim 5, Hughes et al. further teaches a face disposed opposite said fins (See POA Fig 1 above), said base being configured to be mounted with said face abutting a heat-generating component (See POA Fig 1 above). [The Examiner additionally notes that, it has been held that the recitation that an element is "configured to" perform a function is not a positive limitation but only requires the ability to so perform and is therefore given little patentable weight. *In re Hutchison*, 69 USPQ 138.]

With respect to claim 6, Hughes et al. further teaches each of said one or more recesses is further defined by said base (See POA Fig 1 above which details how the base rises perpendicularly to at least partially define the recess).

With respect to claim 7, Hughes et al. further teaches said recess is defined by a plurality of said fins.

With respect to claim 9, Hughes et al. further teaches that the fins (See POA Fig 1 above) are oriented substantially parallel to one another (See Hughes Figs 1 and 2).

With respect to claim 10, Hughes et al. further teaches a method for supporting a circuit card in a computer system, the method comprising performing in order the steps of: affixing in a computer system (Column 1, Lines 9-112) a heat sink (12) having a recess (16) configured to receive an edge (82) of a circuit card (80) such that the recess orients the circuit card to enable mating the circuit card with a connector (Column 3, Lines 55-61), the recess at least partially defined by at least one of a plurality of thermally conductive heat dissipating fins (See POA Fig 1 above), the recess extending parallel to the base (See POA Fig 1 above) and having a depth smaller than the height of said fins (See Hughes Fig 2); and positioning the edges of the circuit card in the recess by advancing the card in the recess in a direction parallel to the base (See Hughes Fig 6, where when positioning the card into the recess one could do so by either advancing perpendicular to the base or parallel to the base).

With respect to claim 11, Hughes et al. further teaches that said positioning step comprises sliding the circuit card in the recess (See Hughes Fig 6, see also Column 5, Lines 23-29).

With respect to claim 12, Hughes et al. further teaches said affixing step comprises affixing the heat sink (12) to a heat-generating component (18).

With respect to claim 14, Hughes et al. further teaches that the circuit card (80) carries at least one heat generating component (Column 1, Lines 9-14), and said positioning step comprises thermally coupling the heat generating component to the heat sink when the circuit card is positioned in the recess. (Column 3, Line 62 – Column 4, Line 3).

With respect to claim 15, Hughes et al. further teaches a circuit board assembly comprising: a circuit board (80); a heat generating component mounted on said circuit board (Column 1, Lines 9-14); and a heat sink (10) thermally coupled to said heat generating component (Column 3, Line 62 - Column 4, Line 3) and having a plurality of fins (See POA Fig 1 above) for dissipating heat having faces parallel to one another (See POA Fig 1 above), said parallel faces of the fins defining a recess (16) for supporting and guiding an edge (82) of a circuit card (80), said recess extending parallel to the base and at least partially defined by at least one of said fins and by surfaces extending along a length of the fins parallel to the base (See POA Fig 1 above), the recess having a depth smaller than the height of said fins (See Hughes Fig 2).

With respect to claim 16, Hughes et al. further teaches that the circuit card (80) comprises an edge portion (82) in sliding association with said recess (See Hughes Fig 6).

With respect to claim 17, Hughes et al. further teaches a connector (78) configured for electrically coupling said circuit card to a computer system (Column 3, Lines 55-61), said recess (16) of said heat sink being oriented to guide said circuit card for coupling said connector to said computer system (Column 3, Lines 55-61).

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With respect to claim 18, Hughes et al. further teaches a heat sink (10) guiding one or more circuit cards (80) and transferring heat from one or more heat-generating components (Column 3, Line 62 – Column 4, Line 3), said heat sink comprising: a surface (Base as illustrated in POA Fig 1 above) defining one or more slots (16) configured to guide an edge of a circuit card; and heat dissipating fins (See POA Fig 1 above, also 14) thermally coupled to said surface, said one or more slots at least partially defined by two adjacent parallel faces of said fins (See POA Fig 1 above), said one or more slots (16) being defined in part by a portion of said surface extending parallel to the base (See POA Fig 1 above), said slot having a depth smaller than the height of said fins (See Hughes Fig 2), said heat sink being configured to provide a thermal path from a heat-generating component to said fins via said surface (Column 3, Lines 62 – Column 4, Line 3).

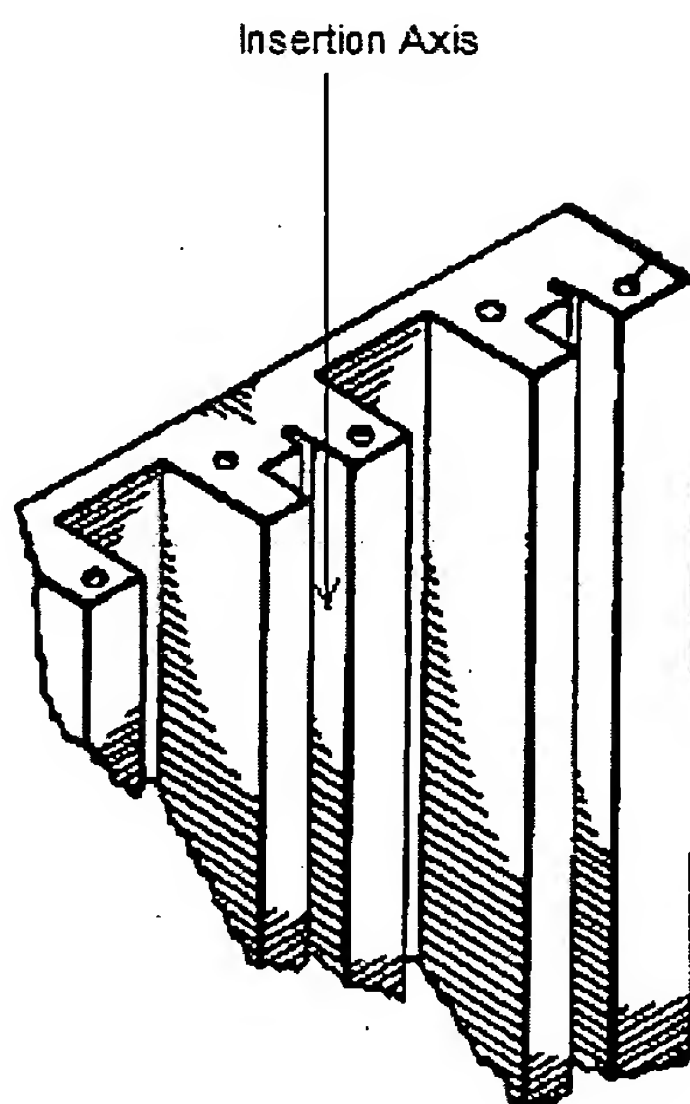
With respect to claim 19, Hughes et al. further teaches a surface (Flat faces of element 14) disposed opposite said slots and configured to be mounted in thermal contact with said one or more heat-generating components.

With respect to claim 20, Hughes et al. further teaches the heat sink having a substantially constant cross section shape (See Hughes Figs 1 and 2).

With respect to claim 21, Hughes et al. further teaches a method for guiding a circuit board in a computer system, said method comprising: sliding an edge portion (82) of the circuit board (84) along an insertion axis (See POA Fig 2 below) in a recess (16) defined by adjacent fins (50, see POA Fig 1 above) of a heat sink (10) of the computer system, the insertion axis extending parallel to a base of the heat sink (See

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POA Fig 2 below), and the recess having a depth smaller than the height of the fins of the heat sink (See Hughes Fig 2), and mating the circuit card with a connector (Column 3, Lines 55-61).

**Fig 2*****Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hughes et al.

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With respect to claim 13, Hughes et al. teaches the limitations of claim 12 above and further teaches the conventionality of having electronic components mounted on a circuit board (Column 1, Lines 9-14) but is silent as to the position of the electronic component being disposed opposite a mounting end of the circuit card (I.E. that which is shown in Fig 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further place the electronic component at a position opposite to the recess (16) since it is obvious and well known in the art to place (heat generating) components anywhere on a circuit board.

Response to Arguments

6. Applicant's arguments filed 1/3/2007 have been fully considered but they are not persuasive.

With respect to the Applicants' remarks to claims 1, 10, 15, 18, and 21 that, "Hughes fails to disclose, teach, or suggest each and every limitation of amended claim 1" because, "Hughes.. is devoid of any teaching, suggestion, or motivation of recesses being defined in part by surfaces extending along the length of the fins parallel to the base", the Examiner respectfully disagrees. As illustrated in the present office action Fig 1 above, the fins extend perpendicularly in a direction away from the base, and also extend parallel to the base along the length of the base. Further the Examiner has noted in the POA Fig 1 above the surfaces of the fins which extend in parallel along the base.

With respect to the Applicants' remarks to claim 10 that, "Hughes teaches advancing circuit cards in the recess in a direction perpendicular to the base.", the Examiner respectfully requests the Applicant's to substantiate such a position. Regarding the remarks that, "Hughes fails to disclose, teach, or suggest positioning the edge of a circuit card by advancing a card in a direction parallel to the base", the Examiner respectfully notes that positioning the card into the heat sink via a direction parallel to the base is an inherent property of the Hughes reference. That is to say that the edge (82) of the circuit card (84) can be inserted in a fashion either perpendicular or parallel to the base, not just perpendicular as alleged.

Regarding the remarks to the Lo reference, the Examiner notes that the rejection of claims 1, 10, 12, and 13 in view of the Lo reference has been withdrawn and therefore arguments thereto are moot.

Conclusion


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Fri. (7:00am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ZMP


LISA LEA-EDMONDS
PRIMARY EXAMINER